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HEALTH DIVISION

and

BIOLOGICAL SECTION OF THE RESEARCH DIVISION**DECLASSIFIED**

Per Letter Instructions Of

T10-1040

M.S. for N.T. Bray
4-2-54 SUPERVISOR LABORATORY RECORDS
ORNLREPORT FOR MONTH ENDING MAY 15, 1945J. E. Wirth, M.D. - K. Z. Morgan
and H. J. CurtisSeries A Received: 5/24/45
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exposures on the pocket meters which add up to >100 mr on the film when it is read at the end of the two week period. The visitors into the Restricted Area wear only the badge meters. However, only one visitor has had a badge meter reading >100 mr during the 8 month period.

Table II

<u>Month and Year</u>	<u>Badge Meters >100 mr</u>	<u>Coincidences between Pocket meters off-scale and badge meter >100 mr.</u>	<u>Coincidences between pocket meters reading from 100 to 200 and badge meter >100 mr.</u>
Sept. 1944	52	2	16
Oct. "	61	6	24
Nov. "	51	5	40
Dec. "	33	1	12
Jan. 1945	91	0	35
Feb. "	36	2	26
March "	24	0	9
April "	38	0	27

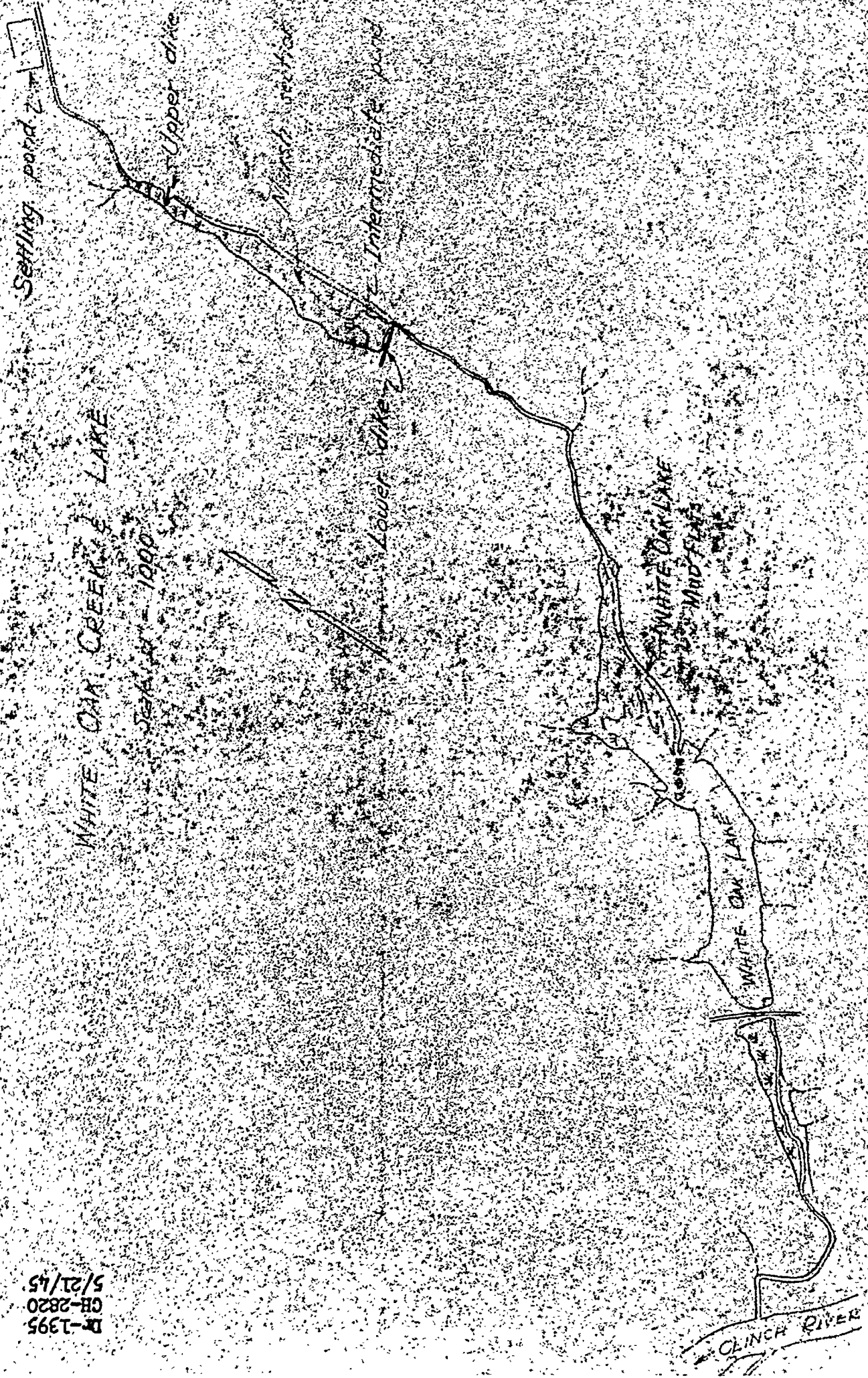
3. Survey of Clinton Laboratories Drainage System - L. H. Weeks et al

An extensive assay of the mud in the White Oak Creek Drainage System for area contaminated, depth of contamination and curie content has been completed. A map of this area between the Settling Pond and the Clinch River has been prepared from Stadia surveys made of the contaminated area and a USC and GS map.

The contaminated portion of White Oak Drainage System can be divided into four principal areas, namely, the Marsh section, the Intermediate Pond, the Mud Flats of White Oak Lake, and White Oak Lake. The Marsh section, which is about 1400 feet below the Settling Pond was made by placing the upper dike across the old White Oak Creek stream bed and diverting the water out into a flat meadow. A large amount of filtering and settling takes place in this Marsh area and more than half of the total radioactivity found in the drainage system is located here. The Intermediate Pond formed by the lower dike shows the next highest contamination. The water is returned to the old stream bed at this lower dike.

White Oak Lake is divided into two sections by a row of trees across its center which serves as a convenient boundry between the Lake proper and the Lake Mud Flats. The section below the trees has a steep bank and a large part of this area is covered by water at all times, while the upstream section is a very flat valley which is covered by water only during the high water periods. For the past six months the upper

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flood gate of White Oak Lake Dam has been left open in order to prevent the dam from washing away during the spring rain season. The upstream section of the lake consists of mud flats at the present low level of the water and is flooded periodically during each rain. The major portion of activity in White Oak Lake is in the mud flats.

In addition to the above areas an assay was made also of the section below the spillway where slight contamination has been noted in previous surveys of this area. (Additional information is given in report of L. H. Weeks to K. Z. Morgan, 5/9/45). The table below summarizes the data on the distribution of radioactive fission products in the drainage system of Clinton Laboratories as of May 1, 1945.

	Max. depth of contamination in inches	Av. μ c/ sq.ft.	Contaminated area (sq.ft.)	Total curies
Marsh	12*	91.5	466,000	42.7
Intermediate Pond	8	87.6	52,300	4.6
W.O.Lake Mud flats (N of trees)	6 $\frac{1}{2}$	22.0	680,000	14.9
W.O.Lake Mud flats (S of trees)	6**	8.5	795,000	6.8
Area below Spillway	5	1.04	300,000	.3
Total.....				69.3

* Contamination was found at three points below 12" but contamination below this depth was negligible compared to that on top of pond.

** One point was found near the Spillway to be contaminated at 11" from top, but this was exceptional in this area.

4. Work Area Surveys - W. H. Ray et al

During the month Survey Report Diagrams have been instituted for nearly all laboratory rooms. An inspection of this file reveals the large amount of work done in routine health surveys. The survey data recorded in this form is not only more immediately available to the Supervisors and men working in the laboratories but it is more readily accessible for future use.

The response of the Supervisors who sign for their respective copies of the survey diagrams has ranged from the extreme of "waste-basket filing" without a glance, to very careful consideration. In one area a major clean-up effort resulted from the improved reporting procedure.